

C.3 CHICAGO OPERATIONS OFFICE SUMMARY

NOTE: This site summary provides information and data for sites under the Department's Chicago's Operations Office. The data for this summary were collected in 1999 and do not necessarily reflect funding or completion profiles for the site. The data do not include changes that resulted from actual FY 2000 appropriations or anticipated changes as a result of both FY 2000 supplemental and FY 2001 budget requests. The Department is in the process of updating its life-cycle information for the EM program.

The 1999 data were the basis for DOE's *Status Report on Paths to Closure* (March 2000). The costs in the "Cost and Completion Date" section of this summary are the sum of the project planning baselines prepared by the field office and generally do not include estimates of project uncertainty. On the other hand, the cost range in the national status report includes an estimate of the cost resulting from project uncertainties, and EM's overall estimate of life-cycle costs of \$151-195 billion from FY 2000 to FY 2070 (or \$168-\$215 billion if the costs incurred between FY 1997 and FY 2000 are included in the cost range estimate).

The Chicago Operations Office, located at the Argonne National Laboratory site in Illinois, is responsible for the safe and efficient cleanup of several national laboratories and other sites under its management. Laboratories managed by the Chicago Operations Office have primary missions relating to research in the following areas: energy, nuclear science, other basic sciences, fusion, and high-energy physics.

Ames Laboratory was established in the 1940s to develop efficient uranium production processes for the Manhattan Project. The Laboratory's programs now emphasize research in the preparation, characterization, and evaluation of properties of metals and their alloys, especially rare earth metals.

Since 1946, **Argonne National Laboratory - East (ANL-E)** has been involved in research and development activities in support of the Department of Energy (DOE) and its predecessor agencies. Currently, it serves as a multi-disciplinary research and development laboratory, which conducts basic and applied research to support the development of energy-related technologies.

The primary mission of **Argonne National Laboratory - West (ANL-W)** was to support liquid metal reactor research and development for the Integral Fast Reactor Program until that program was terminated. The Laboratory's mission

has since been updated to include technology development for spent nuclear fuel and waste treatment, and reactor and fuel cycle safety.

Since 1947, **Brookhaven National Laboratory (BNL)** has been involved in research and development activities in support of DOE and its predecessor agencies. Its current mission is to conduct fundamental research on the conception, design, construction, and operation of large, complex research facilities that carry out both basic and applied research in high energy and nuclear physics.

In March 2000, a Memorandum of Agreement between the Offices of Nuclear Energy, Science, and Environmental Management (EM) is expected to be executed that will transfer program responsibility for the Brookhaven High Flux Beam Reactor (HFBR) to EM. In November 1999 Secretary Richardson announced a permanent shutdown of the reactor. Early plans indicate HFBR decontamination and decommissioning (D&D) will begin following the completion of other EM activities at the site in FY 2006. During FY 2000 to FY 2001 reactor will be deactivated and stabilized to a low risk condition prior to D&D.

In 1972, **Fermi National Accelerator Laboratory** began its mission as a single-program research and development facility for the Atomic Energy Commission when the first accelerator at the laboratory began operations. The Laboratory's current mission is to conduct research in high-energy physics under the direction of the DOE's Office of Science.

Princeton Plasma Physics Laboratory (PPPL) has historically provided research and development for DOE's fusion energy programs. Currently, activities at the site are devoted to the research and development of plasma fusion energy.

C.3.1 End State

The end state for EM program activities at Chicago Operations Office sites is twofold: a) completion of all environmental restoration activities (with the exception of routine operations and monitoring) by FY 2006 or sooner, and b) the transfer of all remaining waste management activities to the Office of Science, which has landlord responsibilities at most Chicago sites, by FY 2001. All landlord site stewardship and future land-use issues will be managed by the Office of Science, with the exception of ANL-W, which will be managed by the Office of Nuclear Energy. Exhibit C.3-1 provides a summary of anticipated end states

for the sites managed by the Chicago Operations Office. Also, the Chicago Operations Office is responsible for payments to support the Princeton Site A/B Project. This responsibility will be transferred to the Office of Science prior to FY 2006.

Exhibit C.3-1
Summary of Chicago Operations Office End States

Site Name	End State Description
Ames Laboratory	Ames will have an ongoing mission under the Office of Science. Environmental Restoration completed its mission in FY 1999 and the Waste Management program is planned to be transferred to Office of Science in FY 2001. The wastes from the former Chemical Waste Disposal Site, which accepted radiological and chemical waste, were removed in FY 1995. All of Ames's waste is treated and/or disposed of off site.
Argonne National Laboratory—East (ANL-E)	ANL-E will have an ongoing mission, with the Office of Science acting as the landlord. The Waste Management Program is planned to be transferred to the Office of Science in FY 2001. Corrective action for some release sites will require on-site containment of residual contamination. ANL-E plans to complete cleanup of surplus reactor and nuclear support facilities by FY 2003.
Argonne National Laboratory—West (ANL-W)	ANL-W has an ongoing mission under the Office of Nuclear Energy. The Waste Management program functions were transferred to Nuclear Energy in early FY 1999. The Central Liquid Processing Area was decontaminated and decommissioned in FY 1998. DOE is remediating soil at sewage lagoons, leach pits, burn pits, and drainage ditches by using phytoremediation with minor soil excavation. The environmental management mission is planned for completion by FY 2001. Remaining activities are expected to become the responsibility of Nuclear Energy after FY 2001.
Brookhaven National Laboratory (BNL)	The Office of Science is the landlord for Brookhaven's ongoing research mission. The Waste Management Program is planned to be transferred to the Office of Science in FY 2001. By 2006, soil and sediment remediation will be complete, the Boneyard wastes will be disposed of off site, and long-term monitoring will be in place. The groundwater remediation systems will be operational. D&D of the graphite reactor will be complete. The final end state for the reactor is not yet defined. Any wastes generated as part of an ongoing mission will be disposed of off site.

Exhibit C.3-1
Summary of Chicago Operations Office End States

Site Name	End State Description
Fermi National Accelerator Laboratory	As of the end of FY 1997, EM had no further obligations to Fermi. Funding for managing waste activities at Fermi was transferred to the Office of Science in the beginning of FY 1998. All waste is sent off site for appropriate treatment and disposal, as required. As long as Fermi National Laboratory is in operation, waste management will be a necessary program function.
Princeton Plasma Physics Laboratory	PPPL will continue to conduct research and generate hazardous and radioactive waste under the Office of Science although the EM mission was completed in FY 1999. The Waste Management program is planned to be transferred to the Office of Science in FY 2001. Soil and groundwater are the media of concern. Contaminated soil and sediment were excavated, treated, and disposed of off site. No active groundwater remediation is currently planned, and natural attenuation will augment the on-site dewatering pumps. Starting in FY 2001, the Office of Science will be the site steward for the current EM scope.

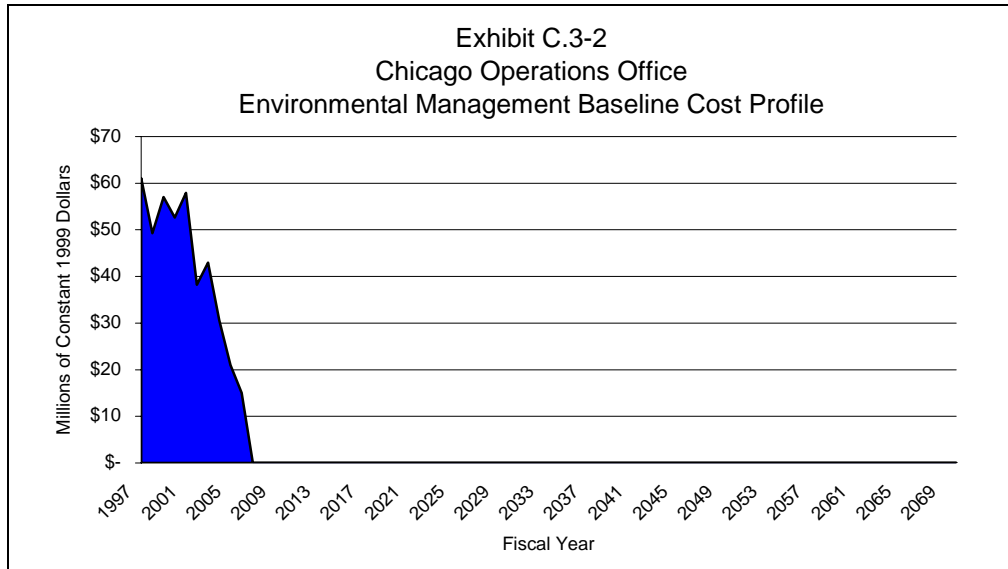
C.3.2 Cost and Completion Dates

The Chicago Operations Office has divided its EM work into 26 discrete projects (HFBR not included). A Project Baseline Summary (PBS) exists for each project and contains detailed programmatic information, including cost, schedule, end state, and interim milestones. For additional information about these projects, refer to the individual PBSs.

The sum of the costs of the planning baselines for individual projects managed by the Chicago Operations Office site cleanups was \$0.4 billion (constant 1999 dollars). Geographic site completion dates for EM work scope are as follows:

Site	Date
Ames Laboratory	1999
Argonne National Laboratory – East	2003
Argonne National Laboratory – West	2001
Brookhaven National Laboratory	2006
Fermi National Accelerator Laboratory	1997
Princeton Plasma Physics Laboratory	1999

The projected cost profile for environmental management associated with the Chicago Operations Office was developed by combining the cost estimates in each of the PBSs. All PBS EM costs end in FY 2006. Exhibit C.3-2 displays the resultant baseline cost profile.



C.3.3 Accomplishments Since the 1998 *Paths to Closure* Report

During FY 1999, the Chicago Operations Office completed an extensive update of all project baselines. These baselines were enhanced with first time estimates for long-term stewardship costs and risk-based contingency. A team of experts from DOE's Federal Energy Technology Center (FETC) independently reviewed the baselines for ANL-E and Brookhaven National Laboratory. The baseline updates focused on the optimization of schedules, changes in cleanup goals, assumptions, and funding requirements. In addition to the baseline review, other accomplishments include the following:

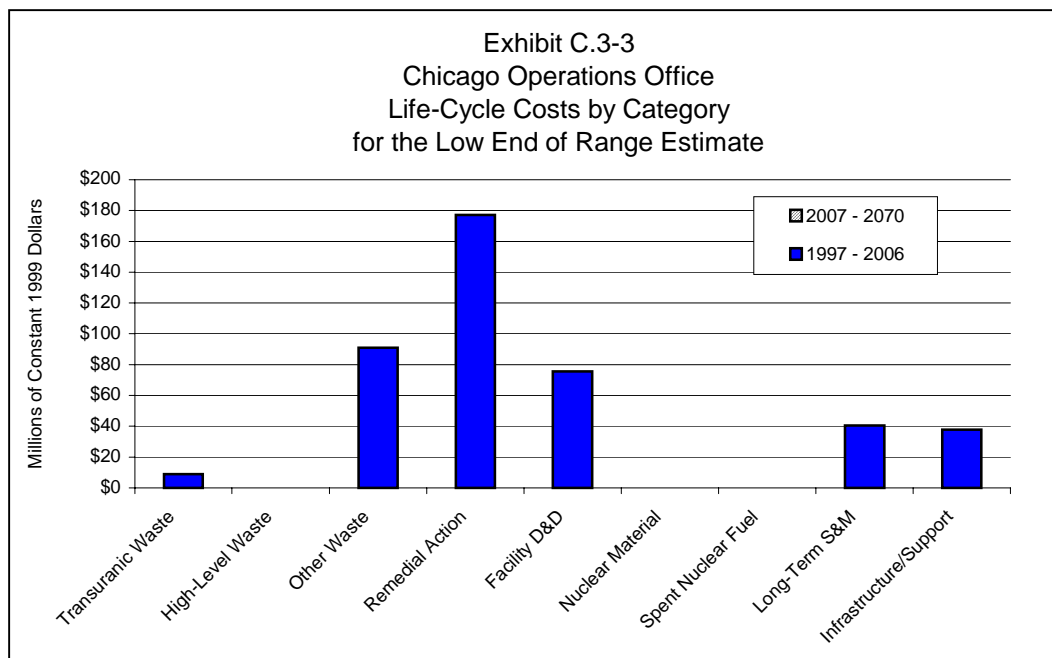
- ❑ Began operation of the first off-site groundwater treatment system at Brookhaven National Laboratory;
- ❑ Signed the Record of Decision for Operable Unit I;
- ❑ Transferred the long-term surveillance and maintenance functions and funding for Hallam, Piqua, and Site A/Plot M to DOE's Grand Junction Office;
- ❑ Signed the final ANL-W Waste Area Group-9;

- ❑ Finished the Argonne ATSR and Building 579 D&D projects;
- ❑ Completed the CP-5 technology demonstration project;
- ❑ Removed the CP-5 reactor vessel and internal components; and
- ❑ Transferred approximately 540 cubic meters of low-level waste was off site.

C.3.4 Work Scope Summary

Cleanup activities at the sites managed by the Chicago Operations Office include the management of groundwater contaminated with radionuclides and hazardous substances, soils and debris contaminated with radionuclides at Brookhaven National Laboratory, and rubble and debris associated with D&D and substances (soil and water) at ANL-E. More information about work scope can be found at the following websites, which contain links to the conceptual summary disposition maps (<http://emi-web.inel.gov/summary.html>) and the detailed disposition maps (<http://emi-web.inel.gov/dmaps.html>) in PDF format.

Exhibit C.3-3 illustrates the Chicago Operations Office EM costs by major work scope categories.



C.3.5 Critical Closure Path

The critical closure path schedule, presented as Exhibit C.3-4, sets forth the estimate for completing the closure activities at the Chicago Operations Office. In the exhibit, the bars represent critical activities, and the diamonds represent critical events/milestones. The critical closure path identifies the major cleanup activities that have little scheduling flexibility and must occur without delays if the EM cleanup mission is to be completed by 2006.

Exhibit C.3-4
Chicago Operations Office
Critical Closure Path

